

AMENDMENTS TO THE SPECIFICATION:

Please amend the paragraph beginning at page 4, line 30, as follows:

To reduce the weight of the plate member, a plurality of lightweight forms 44 are provided in the core. In this embodiment, the forms 44 comprise hollow, solid skin polypropylene balls 14 having a diameter substantially equal to the distance D between the outer plates 11, 12. As shown in Figure 2, which is a cross-section along the line A-A in Figure 1, the balls 14 are arranged in orthogonal rows and columns so that substantial gaps are left between them. This arrangement of forms (e.g., balls 14) is particularly appropriate where the major loads in use are directed along the lateral and longitudinal directions, indicated by arrows in Figure 2. These gaps fill with core material which bonds the outer metal plates together. Because of the curvature of the balls, the core material forms column-like structures extending directly between the outer plates and bonded to the plates over a wide area. Thus the bond strength compared to a solid core is reduced by no more than about 5% and the shear transfer capability is maintained.

Please amend the paragraph beginning at page 5, line 6, as follows:

The balls 14 may also be closely packed in a hexagonal array, as shown in Figure 3. This results in a lighter plate member 20 as the proportion of the core cavity that is occupied by the core material 43313 is reduced. The plate member is also particularly suited to applications in which the major loads will lie on oblique directions, as indicated by arrows in Figure 3.

Please amend the paragraph beginning at page 5, line 10, as follows:

To manufacture the structural sandwich plate member 10, the edge plates are welded around the periphery of lower faceplate 12 and then the balls 14 are placed in the resulting open cavity. At this stage, any precast sections of the core may be put in place as well as any shear

plates or other fittings that may be desired. Then, the upper faceplate 11 is welded to the edge plates to form a closed cavity and the plastics or polymer material injected to form core 13. The injected material is then allowed to cure and the injection ports used in the injection step ground off and sealed along with the vent holes. These steps may be performed in situ, or off-site in factory conditions and the finished panel transported to the installation site. Prior to the injection of the core, the balls 14 help to support the upper faceplate 11 so that larger plate members may be manufactured without sagging and without the need for internal supports.

Please amend the paragraph beginning at page 6, line 1, as follows:

A fourth embodiment of the invention is shown in Figure 6. In addition to the two layers of ~~forms~~balls 14, as provided in the second embodiment, the plate member 50 of the fourth embodiment includes an interlayer 19 provided between the layers of ~~forms~~balls. The interlayer 19 may take a variety of forms for a variety of different purposes. For improved blast and/or ballistics protection, the interlayer 19 may be made of a high tensile strength material such as metal, a high tensile strength fabric, such as Kevlar(TM) (a para-aramid synthetic fiber) or Spectra(TM) (a polyethylene fiber available from Honeywell International Inc.), fibre reinforced plastic, other suitable fabrics, mesh or ceramic sheets. Suitable materials and forms of the interlayer for this purpose are described in copending British patent application number 0326609.5 (Agent's ref N. 88882) entitled "IMPROVED STRUCTURAL SANDWICH PLATE MEMBERS" and filed on 14 Nov. 2003. The whole contents of this document are incorporated by reference. The interlayer may also be shaped so as to assist or determine the placing of the ~~forms~~--e.g. their spacing, orientation or the relative positions of the different layers--and if that is the sole purpose of the interlayer it may be made of the same material as the core or a cheaper material, especially if a mesh.

Please amend the paragraph beginning at page 6, line 21, as follows:

Depending on the intended use of the plate member, various of its properties may be enhanced by the use of different materials for the lightweight forms 44, ~~46~~ and by the provision of different fillings for the forms. For example, the forms 44, ~~46~~ may be made of metal, ceramic, Kevlar(TM) or other high-strength materials to increase the blast and ballistic resistance of the plate member and also to improve shrapnel capture and fragmentation resistance. This may provide particular advantages if an interlayer as described above is also provided for increased blast and ballistics resistance. To increase fire resistance, the forms may also be made of metal or ceramic and may be filled with inert or fire-retardant materials. Other gas or liquid fillings may also be used to improve the acoustic and/or thermal insulation properties of the metal plate. The forms may for the same reason be evacuated.